

Customer No.: 31561
Application No.: 10/605,399
Docket No.: 11853-US-PA

AMENDMENTS

To the Claims:

Please amend the claims according to the following listing of claims and substitute it for all prior versions and listings of claims in the application.

Claim 1 (currently amended) A non-coherent frequency shift keying transmitting circuit for up-converting a baseband signal to a radio frequency signal , comprising:

a micro processing unit, for receiving said baseband signal and generating a digital signal sequence corresponding to said baseband signal;

a frequency synthesizer using interpolation and a linear feedback shift register, coupled to said micro processing unit, for synthesizing said digital signal sequence to a plurality of synthesized signals;

a first oscillator, coupled to said frequency synthesizer, for up-converting said plurality of synthesized signals to an intermediate frequency signal;

a first filter, coupled to said first oscillator, for removing a noise of said intermediate frequency signal;

a digital-analog converter coupled to said first filter;

a second oscillator, coupled to said digital-analog converter, for up-converting to the radio frequency signal;

a second filter, coupled to said second oscillator, for removing a noise of said radio frequency signal; and

Customer No.: 31561
Application No.: 10/605,399
Docket No.: 11853-US-PA

a power amplifier coupled to said second filter.

Claim 2 (original) The transmitting circuit of claim 1, wherein said frequency synthesizer is a digital frequency synthesizer.

Claim 3 (canceled)

~~Claim 4~~³ (original) The transmitting circuit of claim 1, wherein said synthesized signals are two signals.

~~Claim 5~~⁴ (original) The transmitting circuit of claim 1, wherein said first oscillator is a numerical controlled oscillator.

~~Claim 6~~⁵ (original) The transmitting circuit of claim 1, wherein said first filter is a cascaded integrator-comb filter.

~~Claim 7~~⁶ (original) The transmitting circuit of claim 1, wherein said second oscillator is a local oscillator.

~~Claim 8~~⁷ (original) The transmitting circuit of claim 1, wherein said second filter is an analog band-pass filter.

~~Claim 9~~⁸ (original) The transmitting circuit of claim 1, further comprising a transmitting end coupled to said power amplifier.

~~Claims 10~~⁹ (currently amended) A non-coherent frequency shift keying transmitting circuit for up-converting a baseband signal to a radio frequency signal, comprising:

a micro processing unit, receiving said baseband signal and generating a digital signal sequence corresponding to said baseband signal;

Customer No.: 31561
Application No.: 10/605,399
Docket No.: 11853-US-PA

an intermediate frequency processor, coupled to said micro processing unit, up-converting said digital signal sequence to an intermediate frequency signal; and

a radio frequency processor, coupled to said intermediate frequency processor, up-converting said intermediate frequency signal to a radio frequency signal;

wherein said intermediate frequency processor comprises a frequency synthesizer using interpolation and a linear feedback shift register, coupled to said micro processing unit, synthesizing said digital signal sequence to a plurality of synthesized signals.

Claim ~~11~~¹⁰ (currently amended) The transmitting circuit of claim ~~10~~⁹, wherein said intermediate frequency processor further comprises:

~~a frequency synthesizer, coupled to said micro processing unit, synthesizing said digital signal sequence to a plurality of synthesized signals;~~

a first oscillator, coupled to said frequency synthesizer, up-converting said plurality of synthesized signals to an intermediate frequency signal;

a first filter, coupled to said first oscillator, removing a noise of said intermediate frequency signal; and

a digital-analog converter coupled to said first filter.

Claim ~~12~~¹⁵ (original) The transmitting circuit of claim ~~10~~⁹, wherein said radio frequency processor further comprises:

a second oscillator, coupled to said digital-analog converter, for up-converting to a radio frequency signal;

Customer No.: 31561
Application No.: 10/605,399
Docket No.: 11853-US-PA

a second filter, coupled to said second oscillator, for removing a noise of said radio frequency signal; and

a power amplifier, coupled to said second filter.

Claim ~~13~~¹¹ (original) The transmitting circuit of claim ~~11~~¹⁰, wherein said frequency synthesizer is a digital frequency synthesizer.

Claim 14 (canceled)

Claim ~~15~~¹² (original) The transmitting circuit of claim ~~11~~¹⁰, wherein said synthesized signals are two signals.

Claim ~~16~~¹³ (original) The transmitting circuit of claim ~~11~~¹⁰, wherein said first oscillator is a numerical controlled oscillator.

Claim ~~17~~¹⁴ (original) The transmitting circuit of claim ~~11~~¹⁰, wherein said first filter is a cascaded integrator-comb filter.

Claim ~~18~~¹⁶ (original) The transmitting circuit of claim ~~12~~¹⁵, wherein said second oscillator is a local oscillator.

Claim ~~19~~¹⁷ (original) The transmitting circuit of claim ~~12~~¹⁵, wherein said second filter is an analog band-pass filter.

Claim ~~20~~¹⁸ (original) The transmitting circuit of claim ~~12~~¹⁵, further comprising a transmitting end coupled to said power amplifier.

Claim 21 (canceled)

Customer No.: 31561
Application No.: 10/605,399
Docket No.: 11853-US-PA

¹⁹
Claim ~~22~~ (currently amended) A method of non-coherent frequency shift keying transmission, for up-converting a baseband signal to a radio frequency signal, comprising:
receiving said baseband signal and generating a digital signal sequence corresponding to said baseband signal;
using interpolation and a linear feedback shift register to synthesize ~~synthesizing~~ said digital signal sequence to a plurality of synthesized signals;
up-converting said plurality of synthesized signals to an intermediate frequency signal with a first oscillating method;
removing a noise of said intermediate frequency signal with a first filtering method;
converting said noise-removed intermediate frequency signal to an analog signal;
up-converting said analog signal to the radio frequency signal with a second oscillating method; [[and]]
removing a noise of said radio frequency signal with a second filtering method; and
amplifying said noise-removed radio frequency signal and transmitting said amplified radio frequency signal.

²⁰
Claim ~~23~~ (original) The method of claim ~~22~~, wherein said step of synthesizing said digital signal sequence to synthesized signals is performed by a digital frequency synthesizing method.

²¹
Claim ~~24~~ (original) The method of claim ~~22~~, wherein said first oscillating method is a numerical controlled oscillating method.

Customer No.: 31561
Application No.: 10/605,399
Docket No.: 11853-US-PA

Claim ~~25~~²² (original) The method of claim ~~22~~¹⁹, wherein said first filtering is a cascaded integrator-comb filtering method.

Claim ~~26~~²³ (original) The method of claim ~~22~~¹⁹, wherein said second oscillating method is a local oscillating method.

Claim ~~27~~²⁴ (original) The method of claim ~~22~~¹⁹, wherein said second filtering method is an analog band-pass filtering method.